

Appl. No. 10/547,721  
Amdt. dated March 1, 2010  
Reply to Office Action mailed September 1, 2009

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

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1. (Currently Amended) A fuel cell comprising:  
an anode;  
a cathode;  
a membrane that separates the anode and the cathode;  
an electrolyte ~~that holds water as a compound or in a coordinated state~~ comprising a hydrated alkaline earth chloride selected from the group consisting of hydrated magnesium chloride, hydrated calcium chloride, hydrated strontium chloride, and mixtures thereof;  
a carbon fuel.
2. (Original) The fuel cell of Claim 1, wherein the carbon comprises an activated carbon.
3. (Original) The fuel cell of Claim 1, wherein the carbon comprises carbon recovered from organic waste.
4. (Original) The fuel cell of Claim 1, wherein the anode is selected from the group consisting of catalytically-enhanced carbon, nickel metals and graphite.
5. (Original) The fuel cell of Claim 1, wherein the cathode is selected from the group consisting of stainless steel, catalytic carbon, porous nickel, oxygen-reacting cathodes, and graphite.
6. (Original) The fuel cell of Claim 1, wherein the membrane comprises at least one of a proton permeable membrane and a ceramic cloth.
- 7-17. (Cancelled)
18. (Withdrawn) A method of forming carbon dioxide comprising contacting carbon with water in the presence of a carbonate and oxygen in a fuel cell comprising:  
an anode;  
a cathode;

an electrolyte; and,  
a membrane separating the anode and the cathode,  
wherein, carbon dioxide is generated at the anode and the carbonate is formed at the cathode.

19. (Withdrawn) The method of Claim 18, wherein the carbonate is selected from the group consisting of magnesium carbonate, iron carbonate, manganese carbonate and cerium carbonate.

20. (Withdrawn) The method of Claim 18, wherein at least one of the anode and the cathode comprises a nickel metal.

21. (Withdrawn) A method of forming carbon dioxide comprising  
contacting carbon dioxide with at least one of magnesium hydroxide and magnesium oxide to form a bicarbonate; and,  
contacting the bicarbonate with a carbon to form carbon dioxide,  
wherein the step of contacting a bicarbonate with a carbon is conducted in a fuel cell comprising:

an anode;  
a cathode;  
an electrolyte; and,  
a membrane separating the anode from the cathode,  
wherein the magnesium carbonate is formed at the cathode.

22. (Withdrawn) The method of Claim 21, comprising the additional step of adding water to the at least one of magnesium hydroxide and magnesium oxide before contacting the carbon dioxide.

23. (Withdrawn) The method of Claim 21, wherein at least one of the anode and the cathode comprise a nickel metal.

24. (Withdrawn) The method of Claim 21, wherein the carbon comprises carbon recovered from organic waste.

25. (Withdrawn) The method of Claim 21, wherein the electrolyte is selected from the group consisting of an alkaline hydroxide, an alkaline metal hydrate and combinations thereof.

26-28. (Cancelled)